REMARKS

Claims 38-42 are canceled without prejudice. No new matter has been added herewith. The following addresses the substance of the Office Action.

Specification

The Specification was objected to because the drawing descriptions for Figures 7A-C did not contain SEQ ID NO identifiers corresponding to the amino acid sequences disclosed in the Figures. The specification is amended to include SEQ ID NO identifiers for the sequences presented in Figures 7A-C. In addition, the Applicants hereby direct entry of the Substitute Sequence Listing submitted herewith into the Application. The Substitute Sequence Listing includes sequences presented in Figure 7A-C.

VERIFICATION UNDER 37 C.F.R. § 1.821 (f) & (g)

All of the sequences in the Substitute Sequence Listing submitted herewith by EFS-Web were included in the application as filed. Pursuant to 37 C.F.R. § 1.821 (g), no new matter is being added herewith.

Anticipation

Claims 8, 9, 16, 22 and 43 were rejected under 35 U.S.C. § 102(b) as being anticipated by Redmond and Campos (U.S. Patent No. 5,503,833). U.S. Patent No. 5,503,833 discloses compositions and methods for preparing and delivering encapsulated biologically active agents in the VP6 inner capsid protein of rotavirus. The disclosure of U.S. Patent No. 5,503,833 is completely different from the present application for at least three reasons.

The Examiner stated that the term "functional variants", as recited in the present claims, includes VP6. However, that statement is not correct since the term "functional variants" refers to peptides derived from the sequence of VP4 and VP8 and not to other rotavirus peptides or proteins such as VP6. Rotavirus has 11 segments of double stranded RNA contained within a capsid formed by three concentric layers of proteins, of which VP6 is the middle layer. VP6 and VP4 are encoded by different genes and VP8 results from the cleavage of VP4, a protein that forms spikes that project from the outer surface layer formed by VP7. Thus, the present application, which discloses compositions that comprise VP4 and VP8 and U.S. Patent No. 5,503,833, which discloses compositions that comprise VP6 relate to different compositions.

Secondly, the patent by Redmond and Campos proposes the use of VP6 as a carrier that encapsulates therapeutic agents within VP6 spheres. On the other hand, the present invention relies on the capability of VP8 and derived peptides to open the tight junction of epithelial and endothelial cells. In summary, VP6 protein forms spheres that can encapsulate agents, whereas VP8 does not have that capacity, and thus cannot be employed to encapsulate anything. This is clearly understood in light of the scheme presented above.

Thirdly, the patent by Redmond and Campos is based in the discovery that VP6 targets, attaches and is engulfed by monocytes and macrophages. Hence the authors propose its use as a mean for delivering pharmaceuticals to the inside of these cells. In fact, Examples 5 and 7 of U.S. Patent No. 5,503,833 deal with the delivery of recombinant human IFNγ and recombinant bovine IL-2 to the inside of peripheral blood mononuclear leukocytes (PBML). In contrast, the present application discloses the use of VP8 and derived peptides to allow the passage of pharmaceuticals through the paracellular pathway of epithelial and endothelial cells, since VP8 has the ability to open the tight junction. In summary, U.S. Patent No. 5,503,833 proposes the use of VP6 to encapsulate biologically active agents that will be delivered by engulfing to the inside of target cells, namely monocytes and macrophages, while the present application discloses the use of VP8 and derived peptides to open the tight junction and hence cross the epithelial and endothelial barrier through the paracellular pathway.

In view of the preceding remarks, Claims 8, 9, 16, 22 and 43 are novel in light of U.S. Patent No 5,503,833 by Redmond and Campos.

Claims 38, 39 and 41 were rejected under 35 U.S.C. § 102(b) as being anticipated by Genbank Accession No. AAK52093 (July, 2001). Claim 40 was rejected under 35 U.S.C. § 102(b) as being anticipated by Hendrick et al. (1989 *Proc Natl Acad Sci USA* **86**:4056-4060) and Claim 42 was rejected under 35 U.S.C. § 102(b) as being anticipated by Ginger et al. (1998 *Development* **125**:3343-3352). Claims 38-42 are canceled, thereby rendering these rejections moot. Accordingly, the Applicants respectfully request that the rejections be withdrawn.

Obviousness

Claims 8, 9, 16, 22, 23, 31 and 43 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Redmond and Campos (*supra*) and Cao and Lam (2002 *Drugs of Today*, Vol

38, No. 6, Abstract). However, as discussed above, the teachings of Redmond and Campos relate to the VP6 protein of rotavirus, and thus have no bearing on the present disclosure which relates to the presently claimed compositions which comprise rotavirus VP4 or VP8. The combined disclosures of Redmond and Campos and Cao and Lam provide no reason to one of ordinary skill in the art to arrive at the claimed compositions. As such, the cited references do not support the alleged *prima facie* obviousness. Accordingly, the Applicants respectfully request that the rejection be withdrawn.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

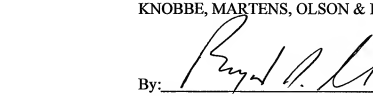
In view of Applicants' amendments to the Claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: April 27, 2009

By: 

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